



PROJECT REPORT
COMPARISON OF DENSENET AND RESNET
ARCHITECTURES FOR CLASSIFICATION ON WHITE
BLOOD CELL

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ABSTRACT

White blood cell examination is useful in determining disease conditions. Accuracy in white blood cell classification is crucial, as errors can result in improper disease detection. Currently, white blood cell classification in healthcare is still done manually, so a system is needed to reduce classification errors. Researchers have tried to classify white blood cells using CNN, ResNet architecture provides good performance. Similar to ResNet, DenseNet also has "skip connections", but the difference is that it has fewer parameters. DenseNet has been evaluated on competitive datasets and the results outperformed ResNet. So in this study, we suspect that the DenseNet architecture can provide higher performance than ResNet in classifying white blood cells. We wanted to compare the performance of ResNet and DenseNet for classifying white blood cells. We used certain parameters and divided the dataset with various comparisons on the two architectures. Then the performance of the model will be evaluated by calculating sensitivity, specificity, and accuracy. Thus, the results of this study can be implemented in the health sector and can help health workers when classifying white blood cells with the right predictions. The best result from the comparison of both DenseNet and ResNet architectures is the DenseNet architecture. DenseNet obtained the results of sensitivity 64,85234678, specificity 88,26916351, and accuracy 82,40852433.

Keyword: white blood cell, cnn, densenet, resnet